

REMARKS

Claims 1-38 are now present in this application with claim 35 being withdrawn for being directed to a non-elected invention. Clarifying amendments have been made to claims 1, 27 and 33. Support for claims 36-38 can be found throughout the present application and specifically at the paragraph bridging pages 5 and 6 of the present specification and in Fig. 1. Reconsideration and allowance for all claims 1-34 and 36-38 of the present application as amended are earnestly solicited in view of the following remarks.

It is alleged in the Office Communication mailed May 15, 2006 that the Final Amendment filed on March 8, 2006 is non-responsive because a vacuum process chamber was not previously claimed. Claim 1 recites first and second zones having a pressure differential existing therebetween. A vacuum process chamber is claimed in the last paragraph of claim 1. However, a vacuum process chamber was previously claimed and therefore is not being introduced as an amendment in this response. Similarly, claims 27 and 33 already recited a vacuum process chamber in the previous responses and therefore a vacuum process chamber is not an amendment introducing new limitations to these claims. As a result, it is respectfully submitted that amended claims 1, 27 and 33 and added claims 36-38 are directed to the previously elected Invention I, a sealing device. Accordingly, it is respectfully submitted that amended claims 1-34 and 36-38 are directed to the elected Invention I of a sealing device and that this Final Amendment is fully responsive to the outstanding Office Action.

Claims 1-34 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,666,276 to Hubler. This rejection is respectfully traversed.

Claim 1 recites a sealing device for providing a seal in vacuum applications of processing systems about a shaft that extends between a first zone and a second zone. The claimed shaft enables movement of an object in the second zone, such as a vacuum process chamber, by an external controller in the first zone. For instance, the object may be a Faraday cup or other measuring devices, a door, wafer holder, etc. as described on the paragraph bridging pages 5 and 6 of the present application. The sealing device comprises a shaft seal and a seal mount for maintaining a vacuum seal for preventing contamination of the processing chamber to which the shaft extends in both the substantially longitudinal manner and at the range of angles. The flexible seal mount permits such a wide degree of motion at the range of angles by the shaft while maintaining a vacuum seal which prevents contamination of the vacuum environment in the second zone or vacuum processing chamber. Similar to the sealing device recited in claim 1,

claims 27 and 33 respectively recite a floating shaft seal for providing a vacuum seal and a device for maintaining a seal for a shaft in processing systems which extends both substantially longitudinal and at a range of angles with respect to the port. Both of these seals are directed to maintaining a vacuum seal in the vacuum process chamber for preventing contamination thereof while allowing the shaft to move at a range of angles for manipulating objects and devices within the processing chamber. The claimed sealing device, floating shaft seal and device for maintaining a seal have particular applicability in ion implantation processing systems.


Hubler is relied on to disclose a sealing device for a rotary shaft which relates to a moderate-leakage sealing device. As shown in Fig. 2, the device includes straps 22, rings 12 and 13, a sleeve 6a, a socket 3a, a lining 5a, and a wall 2a. A layer 5 of material having a low frictional coefficient lines or coats the inner surface of the socket 3 for the shaft 1. The socket 3 restrains against excessive movement of the shaft in the axial direction. A clearance between the shaft 1 and the socket 3 is defined to be as small as possible to minimize leakage therebetween while being sufficiently large enough to prevent binding when the shaft is started or decelerated. The fluid layer 5 is intended to prevent such binding while acting as a moderate leakage sealing device for the shaft.

In contrast, the device of Hubler does disclose a seal for a shaft in processing systems that is moveable in both a substantially longitudinal manner and at a range of angles with respect to a port as recited in claims 1, 27 and 33 of the present application. Furthermore, Hubler does not disclose that the shaft enables movement of an object in a second zone or process chamber by an external controller as claimed in the present application. As a result, Hubler does not allow a shaft with movement in both a substantially longitudinal manner and at a range of angles for manipulating objects and devices within a vacuum process chamber of processing systems while maintaining a vacuum seal as claimed in the present application. Accordingly, it is respectfully submitted that Hubler does not anticipate claims 1-34 of the present application and it is respectfully requested that this rejection be reconsidered and withdrawn.

For all of the above stated reasons, it is respectfully submitted that all of the outstanding rejections have been overcome. Therefore, it is requested that claims 1-34 of the present application be passed to issue for at least the above stated reasons.

If any issues remain unresolved, the Examiner is requested to telephone the undersigned attorney. Please charge any additional fees or credit any overpayments to deposit account No. 50-0896.

Respectfully submitted,
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